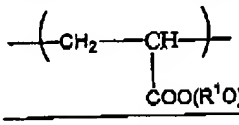
Application No.: 10/820,798 Docket No.: 21581-00320-US1

Listing of Claims

This listing of claims replaces all prior listings and versions of the claims.

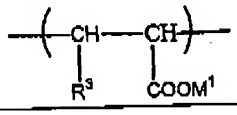
Please cancel claims 2, 4 and 6 without prejudice to their reentry at some later date.

1. (Currently Amended) A polycarboxylic acid cement dispersant which provides a cement composition having a penetrating resistance value exponent of 55 MPa or more and a slump retention exponent of 80% or more, wherein the polycarboxylic acid cement dispersant comprises a polycarboxylic acid polymer having a polyoxyalkylene ester constituent unit (I) represented by the following general formula (1):



(1)

wherein $R^1O$ may be the same or different and each represents an oxyalkylene group containing 2 to 18 carbon atoms; $m^1$ represents the average molar number of addition of the oxyalkylene groups and is a number of 100 to 200; and $R^2$ represents a hydrogen atom or a hydrocarbon group containing 1 to 3 atoms, and a carboxylic acid constituent unit (II) represented by the following general formula (2):



(2)

wherein $R^3$ represents a hydrogen atom, a methyl group or $-COOM^2$; and $M^1$ and $M^2$ may be the same or different and each represents a hydrogen atom, a monovalent metal, a divalent metal, ammonium or organic ammonium.

2. (Canceled)

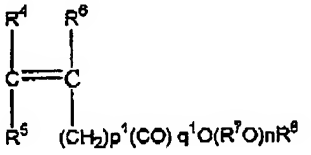
3. (Currently Amended) A method of producing a concrete product which comprises adding the polycarboxylic acid cement dispersant according to claim 1 to the concrete product and ~~a process of~~ curing under a condition of a temperature of 30°C or more~~, using the polcarboxylic acid cement dispersant according to claim 1~~.

4. (Canceled)

5. (Currently Amended) A method of producing a concrete product which comprises adding the polycarboxylic acid cement dispersant according to claim 1 and ~~a process of~~ curing by covering a periphery of a formwork with an insulating material~~, using the polycarboxylic acid cement dispersant according to claim 1~~.

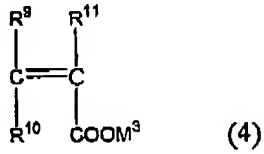
6. (Canceled)

7. (Withdrawn) A method of producing a concrete product which makes use of a copolymer derived by using monomer components comprising a monomer (A) represented by the following general formula (3):



(3)

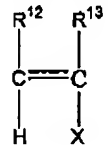
(wherein $R^4$, $R^5$ and $R^6$ may be the same or different and each represents a hydrogen atom or a methyl group; $p^1$ represents a number of 0 to 2; $q^1$ represents a number of 0 or 1; $R^7O$ may be the same or different and each represents an oxyalkylene group containing 2 to 18 carbon atoms; n represents the average molar number of addition of the oxyalkylene groups and is a number of 2 to 300; and $R^8$ represents a hydrogen atom or a hydrocarbon group containing 1 to 30 carbon atoms), monomer (B) represented by the following general formula (4)



(4)

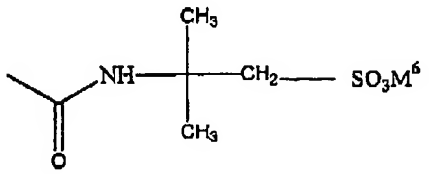
(wherein $R^9$ and $R^{10}$ may be the same or different and each represents a hydrogen atom, a methyl group or $-COOM^4$, provided that $R^9$ and $R^{10}$ does not simultaneously represent $-COOM^4$; $R^{11}$ represents a hydrogen atom, a methyl group or $CH_2COOM^5$, $R^9$ and $R^{10}$ may be the same or different and each represents a hydrogen atom or a methyl group; and $M^3$, $M^4$ and $M^5$ may be the same or different and each represents a hydrogen atom, a monovalent metal, a divalent metal, ammonium or organic ammonium), and

a monomer (C) represented by the following general formula (5):



(5)

X:



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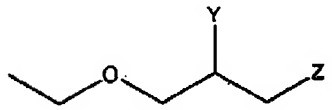

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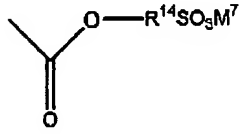

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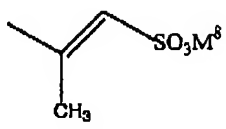


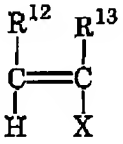
(wherein $R^{12}$ and $R^{13}$ may be the same or different and each represents a hydrogen atom or a methyl group; Y and Z represent a hydroxyl group or $-SO_3M^9$, in which in the case where Y represents a hydroxyl group, Z represents $-SO_3M^9$, while in the case where Y represents $-SO_3M^9$, Z represents a hydroxyl group; $R^{14}$ represents an alkylene group containing 2 to 4 carbon atoms; and $M^6$, $M^7$, $M^8$ and $M^9$ may be the same or different and each represents a hydrogen atom, a monovalent metal, a divalent metal, ammonium or organic ammonium),

wherein the mass ratio of the monomer (C) relative to the total monomer components is not less than 0.1% by mass and not more than 35% by mass.

8. (Withdrawn) The method of producing a concrete product according to claim 7, which comprises a process of curing under a condition of a temperature of 30°C or more.

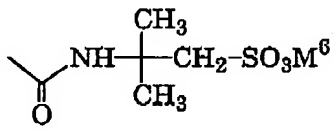
9. (Withdrawn) The method of producing a concrete product according to claim 7, which comprises a process of curing by covering a periphery of a formwork with an insulating material.

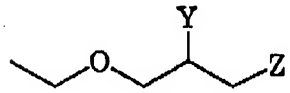
10. (New) The polycarboxylic acid cement dispersant according to claim 1, which is obtained by copolymerizing the monomer components further comprising a sulfonic acid group-containing monomer represented by the following general formula (5):

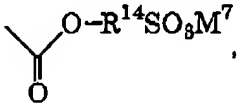


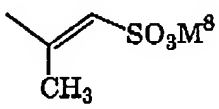
(5)

X:









wherein $R^{12}$ and $R^{13}$ may be the same or different and each represents a hydrogen atom or a methyl group; Y and Z represent a hydroxyl group or $-SO_3M^9$, wherein in the case when Y represents a hydroxyl group, Z represents $-SO_3M^9$, while in the case when Y represents $-SO_3M^9$, Z represents a hydroxyl group; $R^{14}$ represents an alkylene group containing 2 to 4 carbon atoms; and $M^6$, $M^7$, $M^8$ and $M^9$ may be the same or different and each represents a hydrogen atom, a monovalent metal, a divalent metal, ammonium or organic ammonium.